

## What Testing Do I Need To Do? - Part 1

by Dean K. Wilson, P.E.

**Question: “My supervisor has recently placed me in charge of the fire alarm system maintenance for seven locations of our nursing home chain in the northwest part of the state. I really don’t know where to begin. Exactly what testing do I need to do on these systems?”**

*Answer:* Your employer has handed you both an enormous challenge and an enormous opportunity. The challenge comes from making an effort to bring yourself up to speed on the requirements for properly testing and maintaining the fire alarm systems under your care. The opportunity arises from the very significant role you can play in assuring the long term reliability of these systems that serve such a vital role in protecting the lives of the clients using your facilities.

NFPA 72-1999, *National Fire Alarm Code*, offers quite a bit of guidance on this subject in Chapter 7, Inspection, Testing and Maintenance. First of all, you should ask your supervisor to designate these new responsibilities of yours in writing. Section 7-1.2 reads as follows:

7-1.2 The owner or the owner’s designated representative shall be responsible for inspection, testing, and maintenance of the system and alterations or additions to this system. The delegation of responsibility shall be in writing, with a copy of such delegation provided to the authority having jurisdiction upon request.

By designating in writing that you now have the responsibility for inspection, testing, and maintenance of the fire alarm systems, your employer will have started this process in compliance with the *National Fire Alarm Code*.

Next, you should obtain a copy of the *Code* and begin to become familiar with the key requirements of Chapter 7. For example, in Section 7-1.1 , the *Code* asserts the following:

7-1.1 Scope. Chapter 7 shall cover the minimum requirements for the inspection, testing, and maintenance of the fire alarm systems described in Chapter 1, 3, and 5 and for their initiation and notification components described in Chapter 2 and 4. The testing and maintenance requirements for one- and two-family dwelling units shall be located in Chapter 8. Single station detectors used for other than one- and two-family dwelling units shall be tested and maintained in accordance with Chapter 7. More stringent inspection, testing, or maintenance procedures that are required by other parties shall be permitted.

This Section provides you with three key pieces of information. It tells you that Chapter 7 covers the inspection, testing and maintenance of fire alarm systems, other than those for one- and two-family dwelling units. In other words, it definitely covers the commercial systems that you will find installed in your seven nursing homes. The jurisdictional document that required a fire alarm system in those nursing homes to begin with, may be a state, country, or local building code. It may also be a fire prevention order or other local jurisdictional document. It may be NFPA 101, *Life Safety Code*. It may even be a requirement of the insurance company that provides coverage for these nursing homes. In any case, whichever jurisdictional document required the fire alarm system, NFPA 72-1999 now provides the requirements for installation, inspection, testing, maintenance, and use of those systems.

The second key piece of information that this Section provides includes the advisory information that Chapter 7 does cover the inspection, testing, and maintenance of single station smoke alarms used for other than one- and two-family dwelling units. If any of your seven nursing homes happen to use single or multiple-station smoke alarms, then Chapter 7 will provide requirements for the inspection, testing, and maintenance of these smoke alarms.

You will find the third key piece of information that this Section provides in the last sentence. “More stringent inspection, testing, or maintenance procedures that are required by other parties shall be permitted.” For example, if a particular Authority Having Jurisdiction for one or more of your nursing homes—such as the local fire marshal—required more frequent inspection, testing, or maintenance, the *Code* supports his or her decision to do so.

You should next take a look at Sections 7-1.1.1 through 7-1.1.4. These Sections state the following:

7-1.1.1 Inspection, testing, and maintenance programs shall satisfy the requirements of this code, shall conform to the equipment manufacturer's recommendations, and shall verify correct operation of the fire alarm system.

7-1.1.2 System defects and malfunctions shall be corrected. If a defect or malfunction is not corrected at the conclusion of system inspection, testing, or maintenance, the system owner or the owner's designated representative shall be informed of the impairment in writing within 24 hours.

7-1.1.3 Nothing in Chapter 7 shall be intended to prevent the use of alternate test methods or testing devices. Such methods or devices shall provide the same level of effectiveness, and safety, and shall meet the intent of the requirements of Chapter 7.

7-1.1.4 The requirements of Chapter 7 shall apply to both new and existing systems.

In these sections you should note that the program you institute for inspection, testing, and maintenance of the systems in your seven nursing homes should not only satisfy the requirements of the *Code*, but also meet the recommendations of the manufacturers of the fire alarm system components. Effectively, this section incorporates the manufacturers' recommendations into the enforceable requirements of the *Code*. You should also note that whatever procedures you implement to effect the inspection, testing, and maintenance, these procedures should actually verify that the fire alarm system operates correctly.

Section 7-1.1.2 requires that if you discover any defects or malfunctions during the course of your inspection, testing, and maintenance of the seven systems that you correct those defects or repair and resolve those malfunctions. If you cannot complete the repairs at the conclusion of the inspection, testing, and maintenance, you should file written notice of the impairment to the building owner.

Once you begin to develop the particular procedures you will use, if you develop some methods that differ from the requirements of the *Code*, Section 7-1.1.3 permits you to do so, providing that the alternate methods provide an equivalent level of effectiveness and safety, and meet the intent of the requirements of the *Code*.

Section 7-1.1.4 indicates that the requirements of Chapter 7 apply to both new and existing systems. This Section takes on particular importance in light of a requirement from Chapter 1 of the *Code*, which states the following:

1-2.3 Unless otherwise noted, it is not intended that the provisions of this document be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of the document.

*Exception: Those cases where it is determined by the authority having jurisdiction that the existing situation involves a distinct hazard to life or property.*

Normally, the requirements of any particular edition of NFPA 72, *National Fire Alarm Code*, do not apply retroactively to older systems. However, an Authority Having Jurisdiction can apply the requirements from a newer edition of the *Code* when that AHJ determines that a distinct hazard to life or property exists. In this case, however, Chapter 7 states that it does apply to existing systems.

You have already read the requirements of Section 7-1.2. Note specifically the requirements contained in the sub-sections, that read as follows:

7-1.2.1 Inspection, testing, or maintenance shall be permitted to be done by a person or organization other than the owner if conducted under a written contract. Testing and maintenance of central station service systems shall be performed under the contractual arrangements specified in 5-2.2.2.

7-1.2.2 Service personnel shall be qualified and experienced in the inspection, testing, and maintenance of fire alarm systems. Examples of qualified personnel shall be permitted to include, but shall not be limited to, individuals with the following qualifications:

- (1) Factory trained and certified
- (2) National Institute for Certification in Engineering Technologies fire alarm certified
- (3) International Municipal Signal Association fire alarm certified
- (4) Certified by a state or local authority
- (5) Trained and qualified personnel employed by an organization listed by a national testing laboratory for the servicing of fire alarm systems

Your employer had the option, as stated in Section 7-1.2.1, to contract with a fire alarm service provider to inspect, test, and maintain the seven fire alarm systems. However, he or she has chosen to give that responsibility to you. Note that Section 7-1.2.2 states that whoever provides the inspection, testing, and maintenance of the fire alarm systems must have the ability to perform the service in a qualified and experienced manner. I have discussed the details of these qualifications in a previous edition of this column—*IMSA Journal*, November/December 1998, p. 20. It sounds to me like you would make a prime candidate for one of the IMSA Interior Fire Alarm courses. In fact, I highly recommend these courses and urge you to sign up today!

In the next issue, I will continue our discussion of how you should prepare to take on this new responsibility. Your role in caring for the fire alarm systems at these seven nursing homes is a

critical one. Please take this responsibility seriously. And, remember that NFPA 72-1999, *National Fire Alarm Code*, will serve as your very best ally in discharging your responsibility in a professional manner.

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